REMARKS

Claims 1-9 remain in the application and have not been amended. Claim 10 has been added. The application now includes claims 1-10.

The Title has been amended to better reflect the claimed subject matter. This amendment is consistent with the object of the invention stated in the specification. Paragraph [0008] states that the object of the invention is, "...to provide an inkjet device **capable of highly accurate positioning of ink ejection** with almost no increase in the amount of digital image data." In addition, paragraph [0010] and claims 6 - 9 clearly address the method of controlling the inkjet device mentioned in paragraph [0008].

The undersigned thanks Examiner Fidler and Examiner Feggins for the Interview which took place on February 8, 2006. This amendment makes the comments at the Interview of record in the case.

Claims 1 and 6 were rejected as being anticipated by U.S. Patent 6,431,676 to Asauchi. However, the comments in the office action address each of claims 1-9. Therefore, the response has been prepared as if all claims have been rejected as being either anticipated by or being obvious over Asauchi. The applicants traverse the rejection and are of the position that claims 1-9 are patentable over Asauchi without amendment, and that new claim 10 is also patentable over Asauchi.

During the interview Figure 6 and column 7 of Asauchi were discussed (as well as other figures and passages in Asauchi). Figure 6 and column 7 of Asauchi show or describe a method of generating drive waveforms (i.e., a method of determining shapes of drive waveforms). More specifically, the method of generating drive waveforms in Figure 6 is used to generate drive waveforms shown in Figures 7A-8D, in order to change shapes of drive waveforms, depending on the required amounts of ink (i.e., dot sizes). Thus, "output timing data of the clock signal" of Asauchi (column 6, line 16) is data for determining shapes of drive waveforms, not for determining timing of ink ejection.

On the contrary, shapes of drive waveforms in the present invention are unchanged (constant), as shown in drive waveform 258 of Figure 8. In other words, shapes of drive waveforms are neither modified no processed in the present invention. Because the "output timing date of the clock signal" of Asauchi is data for changing shapes of drive waveforms, it is completely different from the timing control data of the present invention.

The present invention relates to processing of "dot pattern data", which is described in column 6, lines 5-13 of Asauchi. However, the "dot pattern data" of Asauchi are developed by referring to font data and graphic functions in the ROM 43, and are sent to the print head 50 (column 6, lines 10-13). The "dot pattern data" are outputted as print signal SI shown in Figures 2 and 3, and as described in column 6, lines 25-26 of Asauchi –"A print signal SI, that is, a signal representing do on-off state of each pixel..." Thus, in Asauchi, all of the "dot pattern data" are outputted to the print head 50 as "print signal SI".

In contrast, the "data generating unit" of the present invention generates not only ejection data (dot pattern data), but also "timing control data" from pattern data (data describing a pattern to be printed). More specifically, the "timing control data" includes not only "drive waveform generation timing data" but also "ejection-data transfer timing data", enabling that ejection data (dot pattern data) are not transferred to print heads when ejection data are the same as previously-transferred ejection data. Hence, according to the present invention, ejection data are transferred to print heads only when ejection data (dot pattern data) have been changed from previously-transferred ejection data. Accordingly, it is possible to minimize the amount data transferred to print heads, thereby considerably reducing the amount of transferred data. On the other hand, the construction of Asuachi does not have this advantage because all of the "dot pattern data" are outputted to the print head as described above.

With respect to claims 2 and 7, Asauchi et al. (6,431,676 B2) does not transfer the data based on the control timing signal as defined by the subject invention. Asauchi et al. (6,431,676 B2) uses the CLK3 signal to transfer the drive waveform

signal while the subject invention uses transfer timing signal based on the control timing signal. The difference between these two clock signals is discussed above. Therefore, Asauchi et al. (6,431,676 B2) does not use the same transfer timing as required in the practice of the invention, and does not anticipate or make obvious the claims 2 and 7.

As for claims 3 and 8, Asauchi et al. (6,431,676 B2) does not define a control timing signal for each of the plurality of lines as required by the subject invention. Instead, as discussed above, Asauchi et al. (6,431,676 B2) uses three preset timing signals to generate and transfer the drive waveform signals. As such, Asauchi does not anticipate or make obvious claims 3 and 8.

With regards to claims 4 and 9, as Asauchi et al. (6,431,676 B2) does not provide the control timing signal generated from the pattern data as discussed above. Therefore, Asauchi et al. (6,431,676 B2) cannot provide the data rotation signal to meet the requirements of the subject invention. The subject invention requires that the data-rotation instructing signal is generated in accordance with the timing control data. Furthermore, Asauchi et al. (6,431,676 B2) does not provide data rotation as described by the subject invention. Asauchi et al. (6,431,676 B2) simply accesses the second data registers once a new drive waveform signal data is generated. The subject invention allows different drive waveform generation methods to be selected such that, different waveforms can be used by switching between multiple registers. Therefore, Asauchi et al. (6,431,676 B2) does not anticipate or make obvious claims 4 and 9.

With respect to claim 5, Asauchi et al. (6,431,676 B2) does not control the inkjet head in the same fashion as the subject invention. As claim 5 is a dependent claim based on claim 1, the control of the ejection data is relative to the control timing data generated based on the pattern data. This feature, as discussed above, is not provided by Asauchi et al. (6,431,676 B2). Therefore, Asauchi et al. (6,431,676 B2) does not provide the features of claim 5.

With regard to new claim 10, page 14 of the application discusses logic values where, for example, logic 1 is defined as ejection of ink, and logical value 0 is defined

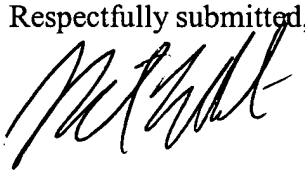
as non-ejection of ink. Here it is explained that the drive signal 259 turns switch 803 on and off based on ejection data 208. When a drive signal of logical value 0 is applied, no ink is ejected. Page 18, lines 21-23 explains that each of the ejection data transfer timing data 210 is also a bit signal that takes a logical value of 0 or 1. Data transfer is requested when the ejection data transfer timing data 210 has a logical value of 1 and does not occur when the logical value is 0. Asauachi does not show or suggest any of the process steps set forth in claim 10.

In view of the foregoing, it is requested that the application be reconsidered, that claims 1 - 10 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at 703-787-9400 (fax: 703-787-7557; email: mike@wcc-ip.com) to discuss any other changes deemed necessary in a telephonic or personal interview.

If an extension of time is required for this response to be considered as being timely filed, a conditional petition is hereby made for such extension of time. Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041 (Whitham, Curtis & Christofferson)

Respectfully submitted,



Michael E. Whitham
Reg. No. 32,635

Whitham, Curtis & Christofferson, P.C.
11491 Sunset Hills Road, Suite 340
Reston, VA 20190
703-787-9400
703-787-7557 (fax)